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July 8, 1987

Chief, Site Investigation and Compliance Branch
Emergency and Remedial Rseponse Division
U.S. Environmental Protection Agency
26 Federal Plaza
New York, New York 10278

Attention: SCP - Carlstadt Project Officer

Dear Sir:

Attached is the June, 1987 Progress Report for RI/FS project at the SCP Carlstadt site. This report has been prepared by Dames & Moore, on behalf of the Committee representing the Respondents named in the Administrative Order on Consent No. II CERCLA-50114, in accordance with Paragraph 28B of the Order.

Very truly yours,

DAMES & MOORE

Gerard M. Coscia

Gerard M. Coscia, P.E.
Project Manager

GMC/jhm
Attachment

cc: Chief, Superfund Branch
Office of Regional Counsel
U.S. Environmental Protection Agency
Room 437
26 Federal Plaza
New York, New York 10278

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ATTACHMENT 1

SCP RI/FS PROGRESS REPORT — JUNE 1987

PROGRESS AND STATUS

1. Drilling for soil sampling and piezometer and well installation began on June 1, 1987. All piezometers and wells except MW-7S/7D were installed this month.

2. Twenty-four soil samples plus one duplicate were collected for chemical analysis. Two undisturbed samples of clay were collected for permeability testing (one each from MW-2D and MW-5D).

3. All seven shallow wells have been developed.

4. Preliminary geophysical data were transmitted to EPA on May 15 and final data were transmitted on May 20. No comments had been received by June 30.

TECHNICAL ISSUES

Numerous technical issues arose during June. These have been addressed in the June 15 and 17, 1987 and July 2, 1987 Dames & Moore correspondence to the EPA and will be summarized below.

1. Shallow ground water (approximately 2 feet below grade) caused a revision in the unsaturated zone sampling interval. Two soil samples were collected at each location instead of three, at depths of 0 to 1 foot and 1 to 2 feet (approximately).

2. The shallow ground water also necessitated revision to the piezometer and shallow well construction details. The POP specified that the sand pack will extend 1 to 2 feet above the top of the screens, with a 2 to 3-foot thick bentonite seal emplaced above the sand pack. For the shallow wells, the top of screen was specified to be 2 feet above the ground water table. These specifications were based on an estimated depth to ground water of 5 feet (see p. 3-6 of the POP). It was not possible to construct the piezometer and shallow well as specified because the ground water table was only 2 feet below grade. The tops of screens were set at 6 inches above the water table in order to intercept the water surface, and the sand pack was extended 6 inches above the screens. A 6-inch thick bentonite seal was emplaced above the sand pack, and the remaining annulus was grouted to grade. This well construction detail represents a compromise between two conflicting requirements (screen location and seal/sand pack thickness), but meets the intent of both: the screens intercept the water table, and a positive seal against surface water inflow is in place.

3. While the POP did not specify a particular drilling method, the EPA assumed that hollow-stem augers would be used to advance boreholes for well installation. Thus, there was some discussion of drilling methods when EPA observed that hollow-stem augers were not being used. Augers were not used for the shallow wells because the fill material contained cobbles, brick, broken concrete and other debris, and in several locations consisted of rock fill (crushed red shale). It would have been difficult if not impossible to advance augers through this material. Instead, a rotary drill bit and potable water were used to advance the borehole and flush the cuttings. Casing was driven where required to maintain an open hole. Drill water was discharged to the ground surface.

   For the deep wells, augers could not be used because of the requirement to case off the upper aquifer before drilling through the clay, and because the underlying till contained significant amounts of gravel and cobbles. In this case, drilling mud (bentonite) was used to flush drill cuttings and to maintain an open hole to the top of bedrock. The EPA required that drilling fluids from the deep wells be collected in drums. The EPA also required that development water from the deep wells be collected in drums, contrary to Paragraph 7.8.5.7 of the approved POP. Drilling fluids and development water have been and will continue to be collected from the deep wells and will be stored on-site in drums until final disposition is determined. Options include discharging to the ground surface (and diverted away from Peach Island Creek) upon completion of the second round of water sampling, or having the full drums taken off-site for disposal.

4. Because of the low yield of the deep wells (1 gpm in MW-2D), and because drilling fluids were used in their installation, the EPA required that well development techniques be revised. The EPA required that the volume of water generated during development be equal to the volume of drilling fluids used during installation. Thus, for MW-2D, 550 gallons (10 drums) of development water was generated, over a period of several days. Subsequently, the EPA modified their requirements to allow air-lifting development (which had originally been proposed in the November 18, 1985 draft POP), which will more efficiently remove any drilling fluids that may have remained outside the well screens. Thus, less development water will be generated from MW-5D and MW-7D.

5. With respect to sampling in the till, the POP had specified continuous soil sampling to top of rock. This was based on an estimated till thickness of 15 feet (see POP p. 3-4). The till in MW-2D was 40 feet thick. The EPA approved subsequent sampling in the till (MW-5D and MW-7D) at 5-foot intervals of depth rather than continuous sampling.

6. Regarding well locations, the EPA approved all well locations as shown on Figure 7-1 of the POP with the exception of wells MW-3S and MW-7S/7D. Based on the piezometer water level data (piezometer casings were surveyed immediately after installation), the gradient in the shallow aquifer indicates flow to the northwest. Wells MW-3S and MW-7S/7D would likely be upgradient wells relative to the SCP site in their proposed locations, in addition to MW-1S and possibly MW-2S/2D. Therefore, MW-3S was shifted from the southwest end to the northeast end of the tank farm, and MW-7S/7D was shifted northwest between the concrete pad and the former sludge pit area.

7. Regarding laboratory testing, cyanides and phenols were inadvertently not included in the parameter table (Table A-2) of the POP. A marked-up parameter table showing the necessary revisions, along with copies of the test procedures for soil samples, is under review by the EPA.

SCHEDULE

Based on a scheduled June 1 start date for the Phase I field work, the project is approximately 1.5 weeks behind schedule. Completion of Phase I, originally estimated at June 26, is anticipated by July 8 (27 field days versus 20 planned field days, excluding the July 3 holiday). Several factors account for this deviation:

1. Continuous sampling through 40 feet of till in MW-2D, as opposed to the 15 feet originally estimated.

2. Delay in completion of MW-2D while EPA reviewed drilling procedures prior to approval.

3. Collection of drilling fluids from MW-2D and MW-5D and development water from MW-2D.

4. Additional time required for developing MW-2D.

5. Numerous days in June exceeded 90°F ambient temperature, requiring frequent breaks to avoid heat stress and otherwise slowing production. Occasional rain also hampered drilling.

PLANNED ACTIVITIES — JULY 1987

1. Complete Phase I field work.

2. Initiate and complete Phase II field work.